Rinnai

Installation guide

iHeat thermostat

TB7100A1000 MultiPRO™ multispeed and multipurpose thermostat

Important:

This appliance shall be installed in accordance with:

- Manufacturer's installation instructions
- AS/NZS 3000
- Local regulations and municipal building codes

Installation, servicing and repair shall be carried out only by authorised personnel.

Please retain this manual for future reference.

Warning
Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life.

For more information about buying, living and servicing of Rinnai appliances call: 0800 RINNAI (0800 746 624)

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General

Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous situation.

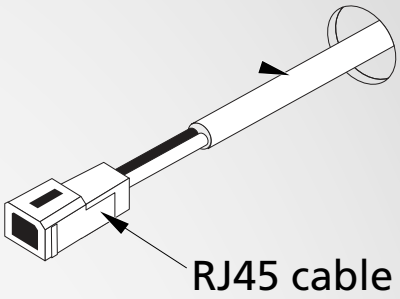
Select thermostat location
Select a location for the thermostat approximately 1.5 m above the floor on an internal wall, and in the location that requires heating.

DO NOT install the thermostat where it can be affected by:

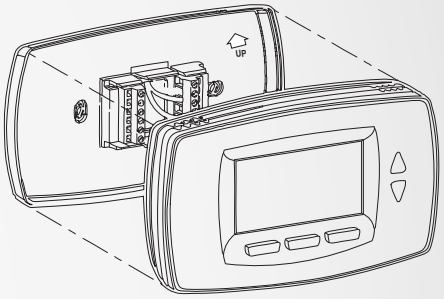
- draughts (hallways, regular accessed doorways etc.)
- hotspots (direct sunlight, above fireplaces/heaters, warm air ducts etc.)
- deadspots where air does not circulate freely (alcoves, corners, behind doors etc.)

Installing the thermostat
Before installing the thermostat make sure the electrician has preinstalled the RJ45 cable.

1. Take the thermostat out of the box, and remove the wall plate from the face plate.
2. Connect the adaptor provided to the RJ45 cable.
3. Push everything back into the wall and secure the wall plate to the wall.
4. Secure the face plate to the wall plate.



RJ45 cable preinstalled by electrician



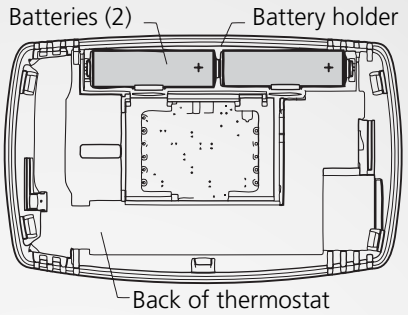
1. Remove wall plate from face plate

Batteries, wallplate, date and time

Installing batteries

1. Install the two AA alkaline batteries supplied on the back of the thermostat.

2. Locate and remove the tab labelled 'Remove'. This tab MUST BE removed in order to set the real-time clock.



Installing batteries

Remove tab

Mounting thermostat to wallplate

1. Align the terminal screw blocks with the pins on the back of the thermostat.

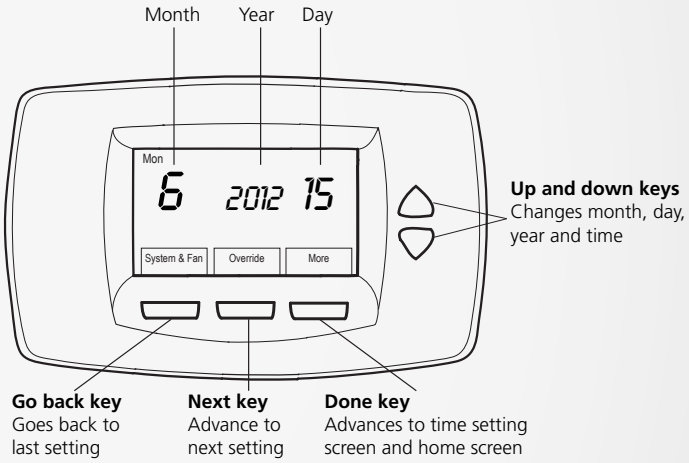
2. Push thermostat straight onto the wallplate until it snaps into place.

Setting calendar and time

This thermostat is designed, under normal use, to automatically keep current time and day in memory for up to ten years once the calendar is set. There are two ways to set the calendar and time for this thermostat.

- setting date/time when thermostat is first powered

- setting date/time after thermostat is already functioning



Setting calendar and time after initial power up

Setting date/time when thermostat is first powered

When the thermostat is first powered, the display is ready to set the calendar and time. The thermostat proceeds through a sequence of setup screens.

Setting date/time after thermostat is already functioning

Use the installer setup (next page) to set year, month, and day—refer next page

Thermostat configuration

To configure the settings for the thermostat:

1. Press and release the 'System' key.
2. Press 'System' and 'Done' keys simultaneously and hold keys for approximately five seconds—until the screen changes.
3. When the display changes, release the keys—the thermostat will display the first setup setting 0120.
4. Use the up and down keys to change the settings and select Next to go to the next step (you can also press Go Back to review and change the previous setup number).
5. Once the system has been configured, press Done to save the settings.

There are 42 possible thermostat setup numbers and four installer tests. For the purposes of this installation guide we have listed only those that are relevant to the Rinnai iHeat system. These are categorised as follows:

- Must not alter
- Must set to
- Rinnai recommend
- Installer/homeowner to decide

For numbers that display, but are not listed in the table (0610, 0660, 0690, 0695 etc.), select 'Next'—these are not required to setup the iHeat.

Setup number	Setting	Default setting	Settings available	Notes
0120	Date - year, first two numbers	20	20-21	20: For years 20xx 21: For years 21xx
0130	Date - year, last two numbers	08	00-99	If you wanted the year 2015 you would use the up and down keys to display 15.
0140	Date - month	6	1-12	
0150	Date - day	15	1-31	For the 1st of the month to the 31st of a month
0160	Schedule options	4	0 = non-programmable	Thermostat is non-programmable
			4 = programmable	Thermostat is fully programmable
0170	System selection	1	8	Must use this setting for correct iHeat operation
0185	Preoccupancy purge duration (refer p. 8 for further information)	0	0 = no duration 1 = one hour 2 = two hours 3 = three hours	0185 is shown only if 4 is selected in 0160
0220	Cycles per hour (CPH)	3	6	Starts per hour, MUST be the same as 0240
0240	CPH for first stage heat	5	6	Starts per hour, MUST be the same as 0220
0280	Continuous backlight	0	0 = no	
			1 = yes	
0320	Temperature setting	0	0 = °F	
			1 = °C	
0330	Daylight saving	0	0	Disabled
			1	Enabled for US daylight saving
0340	Changeover input	0	3	MUST BE SET TO 3
0347	Fan ramping	1	1 = enabled	DO NOT ALTER

Setup number	Setting	Default setting	Settings available	Notes
0348	Fan speed selection	0	0 = user can choose	
			1 = cycle to auto only	Fan runs at the speed selected automatically by the thermostat
0349	Auto fan speed selection reset	0	0 = doesn't switch back to auto fan speed	
			1 = reset to auto after 2 hrs	If 0 is selected in 0348 then the thermostat will revert back to auto fan speed after this time
			2= reset to auto after 4 hrs	
0535	Temporary occupied duration limit	3	0-12 hours	0 = no limit (refer p. 8 for further information)
0540	Number of programmable periods	4	2 = two periods	
			4 = four periods	
0600	Maximum temperature	90	40 to 90 °F (4-32 °C)	
0640	Clock format	12	12 = 12 hour	
			24 = 24 hour	
0650	Extended fan-on time heat	0	0 = off	DO NOT ALTER—iHeat control board has built-in fan delays
0670	Keypad lockout	0	0 = unlocked	All functions accessible
			1 = partial lockout 1	Locks out system and schedule changes
			2 = partial lockout 2	Locks out system, schedule, and fan changes
			3 = partial lockout 3	Locks out schedule, system, fan, and up/down arrow changes
			4 = fully locked	Entire interface locked/non-functional
0680	Temperature control heat	2	1 = less aggressive	Set to 1 to reduce Infinity starts and allow room temperature to vary slightly
			2 = standard	
			3 = more aggressive	Set to 3 to control room temperature more, but Infinity will start more often
0685	Recovery heat temp. rate	5	0-20 °F/hour	This parameter determines how quickly the room temp. is changed ahead of the programmed time so the room will be at the desired temperature. High values will likely cause the fan to run at high speeds, which could increase air movement noise. For example, if the programmed temp. is set to 22 °C at 6am and 0685 is set at 15, the iHeat system could run at maximum at 5:30am to heat the house—this could potentially be disruptive. Rinnai recommends leaving the setting at 5.
0700	Temp. display offset (refer p. 8 for further information)	0	-1.5 °C to 1.5 °C -3.0 °F to 3.0 °F	This is a calibration adjustment. This can be changed so the temperature displayed matches an existing reference thermometer that a customer may have.
0710	Restore factory defaults	0	0 = no	Resets all ISU/schedule parameters to default values. Retains only calendar settings and time.
			1 = yes	
0720	Screen display	2	0 = display room temp.	
			1 = display setpoint	
			2 = display both	

Installer thermostat tests

Setup number	Setting	Default setting	Settings available	Notes
Installer tests				
Test 2	Installer test fan	0	0 = off 1 = fan stage 1 2 = fan stage 2 3 = fan stage 3	Only shown if system has a fan
Test 3	Installer test heat	0	0 = off 1 = heat stage 1 2 = heat stage 2	iHeat has no heat stage 2

Further information on preoccupancy purge (0185)
This feature is available only when the thermostat is configured as a programmable schedule, and when a fan is used. The fan will run 1-3 hours before the occupied schedule starting time to circulate air.

Further information on temporary occupied duration limit (0535)
While in programmable mode, an override button is available to perform a temporary override. In 0535 the override time can be limited; 0 = no limit, 12 = override limited to 12 hours.

Further information on temperature display offset (0700)
Sometimes we receive enquiries from customers stating the room temperature is different to the temperature they are seeing on their remote thermometer. One way to address this is by adjusting the temperature display offset in 0700.

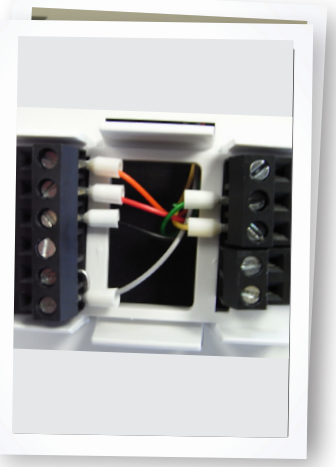
Rinnai iHeat thermostat

Troubleshooting

Troubleshooting table

Symptom	Possible cause	Action
Display does not come on.	Thermostat is not being powered.	Check for 24 Vac between C and RC.
Temperature settings do not change.	The upper or lower temperature limits were reached.	Check temperature setpoints. Check setup numbers 0600 and 0610; modify as needed.
	The keypad is fully locked.	Check setup number 0670 to change keypad options.
Heating does not come on.	Thermostat minimum off-time is activated.	Wait five minutes for the system to respond.
	System selection not set to heat.	Set system selection to correct position.
	System type selection is incorrect.	Check setup number 0170 and make sure 8 is selected.
Thermostat is calling for heat but no heating is running.	Heating equipment is not operating.	Check wiring. Check setup number 0170 and make sure 8 is selected. Verify operation of equipment in system test mode.
Heat does not turn on.	Heating equipment failure.	Check for 24 Vac at the equipment on the secondary side of the transformer between power and common. If voltage is not present, check the heating equipment to find the cause of the problem. Check for 24 Vac between the heat terminal (W)) and transformer common. If 24 Vac is present, the thermostat is functional. Check the heating equipment to find the cause of the problem.
	Loose or broken wire connection between thermostat and heating equipment.	Check for 24 Vac between the heat terminal (W)) and transformer common. If voltage is not present, check wire connection (loose or broken) between the thermostat and the heating equipment.

If the appliance cannot be made to perform correctly please contact Rinnai (0800 TO RINNAI) 0800 76 746 624.



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